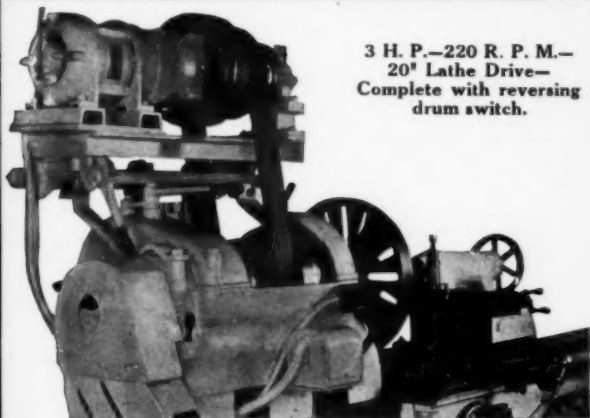


Hitchcock's Machine Tool Blue Book

MARCH, 1934

TWENTY-NINTH YEAR



3 H. P.—220 R. P. M.—
20" Lathe Drive—
Complete with reversing
drum switch.

Machine Tool Motorization

Modernize your cone pulley machines by the addition of one of these sturdy drives. Easy to attach—4 bolts and a short belt making your machine ready for heavy production. Complete drives available for a wide range of machines.

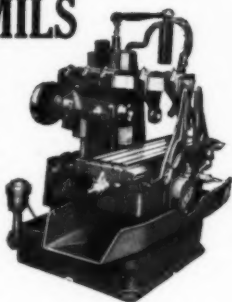
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THE PRODUCTION EQUIPMENT CO.
5213 Chester Ave., CLEVELAND, OHIO

PUBLISHED AT 408 So. DEARBORN ST. CHICAGO

NEW RIGIDMILS

New 3-A Rigidmil shown at right, and 3-C and No. 4 for larger work, give you greater possibilities for cutting costs, improving production, increasing net profits. Basic Rigidmil principles retained, many improvements added. Investigate!



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Made in 5 sizes, with capacities from 800 lbs. to 24,000 lbs. Others for propellers, flywheels, pulleys, etc.

3-WHEEL TOOL GRINDER

For grinding and honing tungsten carbides — steel — stellite. 3 types. Get new circular.



These Sundstrand tools, like our Lathes and Milling Machines, cut costs and make work easier. **INVESTIGATE!** Address our Dept. H for details.

**Hitchcock's
Machine Tool
Blue Book**

**Selected
Circulation**

**10,000
Monthly**

MARCH, 1934

TWENTY-NINTH YEAR

To Manufacturers

You should not miss a careful reading of the article on page 9 of this issue.

Mr. Malcolm Muir, President of the McGraw-Hill Publishing Co., states some extremely pertinent facts, based upon his observations as a successful business man and as a recent Deputy Administrator of the NRA.

Manufacturers will find it much to their profit to follow the sound advice and heed the timely warning given by Mr. Muir.



Published By

Hitchcock Publishing Co.
508 S. Dearborn St., Chicago, Ill.

Consult the Classified Finding Index for your requirements

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

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FOOTBURT

KRW Hydraulic and Sensitive ARBOR PRESSES

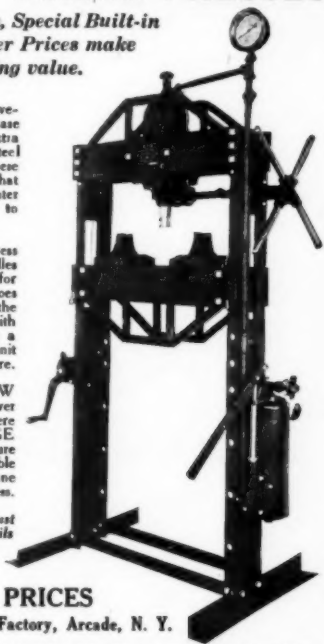
New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.

THE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this KRW feature as a time and labor saver can be appreciated. Also there is **NO EXTRA CHARGE** for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

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| No. 37—35 ton Hydraulic and Sensitive Arbor Press (hand operated) | \$128.00 |
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| (Can also be furnished in air-oil operated at same price) | |
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| Gauge and fittings, \$15.00 extra on all presses. | |

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Anderson Ever Ready Balancing Ways

Exceedingly Sensitive

Easy to Manipulate



Made in six sizes to balance anything that revolves from a crank shaft to a 24,000 lb. turbine rotor. They require no special leveling, no adjustment, and no centers.

Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards..	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	
Code.....	Bend	Rid	Ris	Bib	Ben	

Anderson Bros. Mfg. Co.
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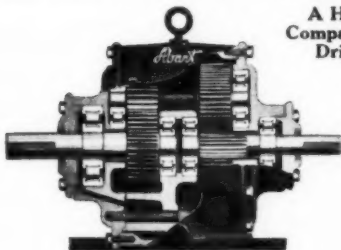


This one mandrel, the No. 4 size, will take every fractional part of an inch from 2" to 2½". It would require 32 solid mandrels to do this in 64th sizes, and intermediate sizes could not be taken. Better order a few "Nicholsons."

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A Highly Efficient
Compact, Straight Line
Drive Spur Gear
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RATIOS
Up To
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We also Manufacture Gears of all Types and Materials.

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CAN FURNISH EITHER
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For the
Lighter
Class of
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Quality at a reasonable price makes it a profitable investment.

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Simply insert the *Fingers* of this time saving device into the flutes of the broken tap, unscrew the Extractor with an ordinary tap wrench, and back the tap out. A **WALTON** obviates delays and operates so simply that an apprentice can handle it.

Made in three and four-flute styles.

Let us send you one for a sixty-day trial

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302 Pearl St.,

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*New Catalog No. 26
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Flexible Shafts AND EQUIPMENTS

for Grinding, Polishing, Sanding, Drilling, Lathe-grinding, Screw-driving, Nut-setting and many other operations. Horizontal and vertical types. Quality machines for all industries.

Originators and Manufacturers

N. A. STRAND & CO.

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Chicago, U. S. A.

Improve Your Plants Or Commit Commercial Suicide

"Improve your plants—or go out of business."

That is the choice facing manufacturers of the country under NRA, according to Malcolm Muir, president of McGraw-Hill Publishing Company, who is back at his desk after his long service as deputy administrator of NRA.

"Old methods of doing business have been thrown into the scrap heap," commented Mr. Muir. "Through the process of codification, industry is faced with a complete revolution in methods of doing business. Efficient production management takes on new significance. Old marketing and sales programs are as dead as the dodo. I know of no instrument as valuable to business under these conditions as industrial and trade journals, particularly those which will live up to their responsibility and opportunity."

Mr. Muir pointed out that under the codes, buying of capital goods will be stimulated almost automatically.

"In general, these codes prohibit selling below cost," he said. "That means any manufacturer's own cost. There is nothing in any code to prevent him from selling under his competitor's cost. In view of this situation, it becomes obvious that normal competition will tend to force manufacturers to reduce their operating costs through modernization and increased efficiency of operation."

"The plant that does reduce its costs through modernization obtains an immediate economic advantage which it can use in many ways. It might even sell at the same price as its competitors and use the extra profit for improved quality, more salesmen, more advertising, for redesign of products, or for dividends.

"On the other hand it is my opinion that if the high-cost plant, which also has agreed not to sell below its cost, refuses to see the advantage of installing up-to-date machinery, and if it is determined to retain high costs by tolerating obsolescence, it is making what is virtually a decision to commit commercial suicide."—Reprinted by permission from Class & Industrial Marketing Section.

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Will feed from 0° to 30° per stroke. Fits any size or make of press.

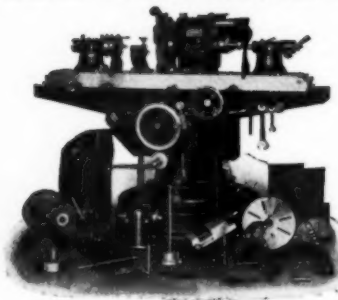
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Low in first cost. No up-keep. Built with or without straightener to meet all feeding conditions.

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**12'x36'
Thompson
Universal
Grinder**

Does every grinding operation required in the machine shop. Lowest cost work for plain, surface, die, cutter, edge and internal grinding. All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

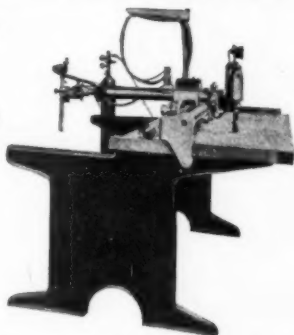
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The Thompson Grinder Company
1534 West Main St., Springfield, Ohio

The HANCOCK OXYCOP Reduces Your Cutting Costs

Here's How!

Speedy Cutting
Economical Operation
Low Upkeep
Accurate Cutting
Wide Range
Uses City Gas
Easy to Operate
Pays for Itself
in Very Short Time



Every Tool Room Can Use It

DIES, jigs, fixtures, etc., usually drilled and finished on a shaper can be done with the Simplex Oxy-cop in a few minutes—instead of hours. Actual time studies show that jobs done by conventional methods and requiring 85 hours to complete were cut on the Oxy-cop in *less than 6 hours*. Cuts when completed are clean and smooth, unless a finished surface is desired, no machining is necessary. Steel cut this way does not carbonize.

Investigate This Fast, Economical Method

The Hancock Simplex Type Oxy-cop is made in three sizes. The No. 1—illustrated above—has a cutting capacity of 24"x18"; No. 2, 36"x24" and No. 3, 60"x40". Nos. 1 and 2 can be furnished either as standard or universal machines. Full instructions are given with each machine. If you are interested in materially reducing your tool room costs it will pay you well to investigate the Hancock Oxy-cop.

*Write for Illustrated Catalog Giving Complete Information,
Including Interesting Tables of Cutting Time.*

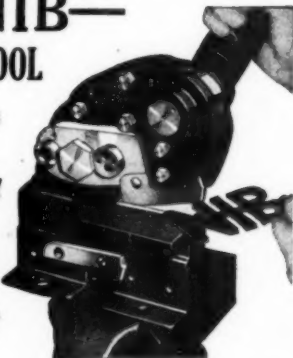
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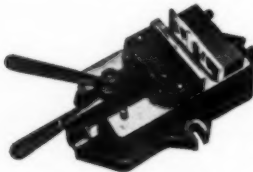


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Because it was designed to "take it"—and it does! It will stand up, day after day, under the heaviest, toughest strain of production milling work. Made of the best materials, with all parts interchangeable, it will outlast four or five ordinary vises. Rapid and accurate in operation—the top eccentric handle gives tremendous binding force, while the lower cam-faceted handle gives instantaneous quick-opening and return. A trial in your shop will convince you better than anything we might say.

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Maximum opening	3 1/2"
Weight	40 lbs

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2 1/4".

We also Build Machinery on a Contract Basis, Design and Develop Special Automatic Machinery—Gears and Cams Cut to Order.

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\$38⁰⁰



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f. o. b. Chicago—a 4"x4" capacity at \$38. With MARVEL saws at that price it hardly pays to repair old ones. Ask your dealer to show you the No. 1 and No. 2 Marvel Sawing Machines, the "old reliable."

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Circular "The Hack Saw People"
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PULLEY GRINDERS

Finish Belt Surface, Crowned or Straight, from the Rough. Also Truck Treads and Curved Work.

GRINDER CHUCKS hold Abrasive Rings, 10" to 30" dia.

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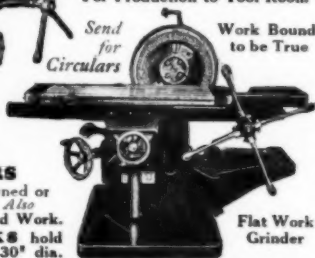
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Ring Wheels 12" and 18"

Table travels 16" and 24"

For Production to Tool Room

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Flat Work
Grinder

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Armstrong Star Drills



Armstrong Bros. Tool Co., "The Tool Holder People," Chicago, have added Star Drills to their imposing list of Armstrong Tools. They are drop forged from special high carbon chisel steel, hardened and tempered and it is claimed hold their sharpness. They are finished in black baked enamel and edges are ground bright. Shanks are of proper stiffness to prevent bending.

In characteristic Armstrong style the new line is introduced "complete" with drills in "all sizes"; 8", 12", 18" and 24" lengths are made in diameters from $\frac{1}{4}$ " to 1" by sixteenth inches; large diameters from 1" to $1\frac{1}{2}$ " come by eighths in the 12", 18" and 24" lengths. Armstrong Star Drills are of the 4-point type and sell at the standard prices.

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—assure peak production and lower Maintenance costs. Cover a wide range of riveting. Rigidly built and powerful. Made in 15 models.

Send samples of your work for riveting, cost of equipment, and true estimates on production.

"They Rivet Noiselessly"

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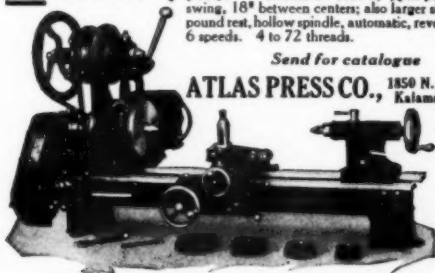
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\$79 cash
as shown, less
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Months
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Actual Riveting Results



Are Most Convincing

Send us samples of your most difficult work, in close corners or out-of-the-way places, let us rivet them on the—

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—and we will return them, with time and cost estimate.

The GRANT produces highly polished heads, without hammer or tool marks. Speed: a rivet a second. May be operated by unskilled labor—and it's *noiseless*.

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With 24 Stages of Control.

The LUMA Master Etchtool fulfills every marking requirement that can be done by an electric Etching outfit.

A Production Tool with as many as 24 different stages or varieties of control for regulating the depth of marking, this tool can be used for extra light marking of machinest scales, micrometers and fine tools or can be used for *extra heavy and deep* marking of rough and unfinished iron, cast iron, forgings, steel plates, etc.

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CAPACITY:

Size No. 1 { Brass $\frac{1}{4}$ "
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Size No. 2 { Brass $\frac{1}{2}$ "
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*Also other sizes
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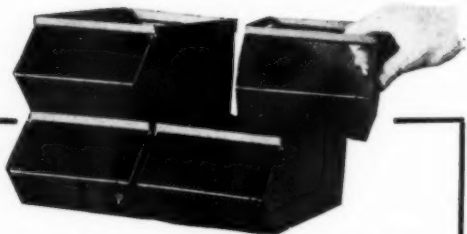
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Made
In
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Up To
10½"

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Milling Machine

Vise



Jaws open 6¾"

Plain & Swivel Base Vise

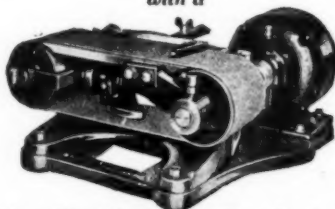
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This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

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In highest possible quality of material, precision of machining and nicety of adjustments, the "BUTTERFLY" Filing Machine is as painstaking a product as the finest watch movement—and just as reliable.



Noiseless in Operation !

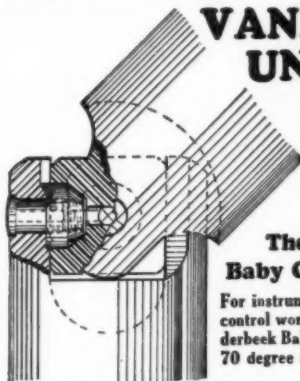
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TRADE MARK REG. IN U.S. PAT. OFFICE

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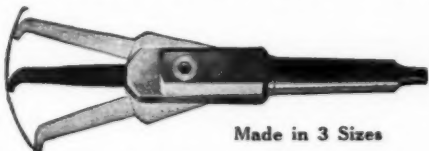
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"The Tool Holder People"

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Made in 3 Sizes

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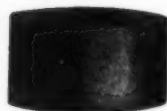
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Special sizes quickly made*



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The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



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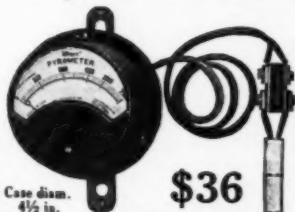
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Lathe, 18"x10" Reed-Prent. g. h. s. p. d.
Lathe, 24"x16" Bridgeford, g. hd. m. d.
Lathe, 26"x21" 6" Bridgeford, g. h.
Lathe, 48"x26" Bridgeford, g. hd. m. d.

Lathe, turret, No. 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, 6 1/2" hole.
Lathe, turret, 34" Gisholt, b. d.
Lysholm tables, 72"x30".
Miller, duplex, 24" Cincinnati, auto.
Miller, pl., Nos. 3 & 5 Cinc., s. p. d.
Miller, universal, No. 3 LeBlond.
Motors, a. c. & d. c.
Pickler, 4 arm Mesta, 10' radius.
Pipe machine, 2" Landis, belt drive.
Pipe mches., 4", 6" & 8" Oster.
Planer, 30"x30"x10' Woodward & P.
Planer, 48"x48"x18" Cinti., belt drive.
Planer, o. s., 36"x36"x16" D. & H.
Planer, o. s., 48"x48"x16" D. & H. m. d.
Press, auto., McDonald, No. 31-E.G.
Press, No. 9 Bliss inclinable, foot.
Press, o. b. i., No. 4 Niagara 3" st., b. d.
Press, o. b. i., No. 69 N dbl act. 5" st.
Presses, o. b. i. Bliss, Nos. 18, 19, 20.
Press, o. b. i., No. 6-A Toledo, 1 1/2" st.
Press, hyd., 400-ton Robertson, m. d.
Press, No. 78 1/2 Bliss, t. r., 10" str.
Press, No. 96-A Toledo, d. c. 5" str.
Press, screw, No. 87 Niagara.
Press, wheel, 200-ton Lorie.
Punch, hand, Shatz, bar and angle.
Punch & s., No. 6 L. & A. 1/2" thru 1/4"
Punch, EF Cleveland, 36" thrt., 1 1/2"-1"
Punch, mult., No. 5 H. & J. 10".
Riveters, air, hammer, spinning.
Roll, bend, 50" Bertsch, 3/16" init. type
Rolls, bending, 12"x3" H. & J. d. e.
Rolling mill, 6"x10" Standard, m. d.
Roller, thread, Nos. 10, 30, 40 W.-F.
Saws, band, 26 and 33" Fay & Egan.
Saw, cold, 48" Newton, m. d.
Saw, friction, Nos. 2 & 3 Ryerson.
Saw, hack, Racine Jr. 4"x4", m. d.
Saw, hack, No. 5 Marvel, 6"x6".
Saw, hack, No. 4 Robertson, 8"x8".
Screw mchs. Nos. 52, 53, 55 Nat. A.
Shapers, 16", 20", 24" & 36" G. & E.
Shear, angle, 6"x6"x1" H. & J.
Shears, alligator, 14", 2", 3" & 4".
Shear, bevel, Lennox 1/2", b. d.
Shear, circle, No. 13 Niagara, b. d.
Shears, foot, 30" and 36" Pexto.
Shear, guil. No. 5 H. & J. 4" sq., m. d.
Shear, rot. No. 114 Lennox 1/2", m. d.
Shear, squar. 52" Niagara, 1/2", m. d.
Shear, squaring 8' x 14 ga. Oil, b. d.
Shear, 12' x 1/2" Wheeling, 31" gap.
Slitter, 38" Lamb & Nash, Model F.
Straightner, 72" Newbold, 9 roll m. d.
Straightner, 1 1/2 & 4" round Abramson.
Str. & sh., No. 1025 B. & J. 9"x3/16"
Swaging mche., No. 5-A Standard.
Testing mche., Brinnell hardness.
Upsetters, 1" to 6".
Welders, spot and butt.
Woodworking Machinery.

USED AND REBUILT MACHINERY FOR SALE BY

Brown Machinery Co.,
Drills: 24", 26" and 32"; No. 66-D
Moline 4-spindle Hole Hog.
Grinders: No. 6 Besly dbl. spindle;
No. 220 Badger auto. disc; 12x30"
Modern, plain, s. c. c. s.; No. 4
Cincinnati, 14x72 cylindrical; P. &
W. 36" vertical surface.
Hammer, 40 lb. Bradley helve;
100 lb. Little Giant.
Lathes, 36" Blaisdell, 36" Harrington
gap. ext. bed; 26" Putnam, taper
att., 18" & 16" Lodge & Shipley;
16" & 14" Monarch; 7"x6' Lo-swing;
18"x10' South Bend.

2333 N. 9th St., St. Louis, Mo.
Millers: No. 2 Hendey-Norton, univ.;
No. 3 $\frac{1}{2}$ Fox; No. 4 Hendey Lincoln;
Planer, 42x42x10 Pond.
Press, No. 7 Zeh & Hahneman,
Nos. 1, 3, 4 Loshbough Jordan.
Punch, Cleveland C $\frac{1}{2}$ in $\frac{1}{4}$ "; Rock
River Style L $\frac{1}{2}$ in $\frac{1}{4}$ ".
Punch & shear, No. 9C Beloit, $\frac{1}{2}$ in $\frac{1}{4}$ ".
Punch & shear, L. & A. $\frac{1}{4}$ " cap.
Riveter, No. 5A High Speed, $\frac{1}{4}$ ".
Shaper, 24" Ohio; 20" Queen City.
Threaders: $\frac{1}{4}$ " Geometric; National
1 $\frac{1}{2}$ " double head and single head.
Welder, 20 k. w. Agnew.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 Hadley Street,

St. Louis, Mo.

Air compressors, all sizes.
Bar shear, 5"x $\frac{1}{4}$ ".
Bolt header, 2" Ajax.
Boring mill, 36" Gisholt.
Bulldozer, No. 3 Williams-White.
Bulldozer, No. 4 Ajax.
Drills, 1-spindle Avey.
Grinder, Wells Bros. universal.
Grinder, 12"x60" Landis universal.
Grinder, 12"x36" Thompson univ.
Grinder, No. 60 Heald cylinder.
Hammer, 60 lb. Bradley helve.
Lathe, 16"x9' Lehman.
Lathe, 24"x12' Schumacher & Boye.
Lathe, 24"-48"x18" McCabe, 2-spd.

Lathe, 36"x15' American, q. c. g.
Lathe, 36"x16' Prentice, geared hd.
Millers, Nos. 3 & 4 Brown & S., pl.
Miller, Ingersoll slab, 27"x23"x14'
bed, 4 heads, motor drive.
Pipe machines, 4" and 8".
Planer, 60"x48"x10 Gray.
Press, No. 1 $\frac{1}{2}$ Bliss toggle.
Press, No. 24 Toledo cam drawing.
Press, No. 723 Toledo cam drawing.
Punch, No. 14 W. W., 12" throat.
Punch, two 20" throats, cap 1" in 1"
Sand slinger, Beardsley & Piper.
Shaper, 16" Smith & Mills.
Shaper, 24" American, motor drive.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill

MILLERS

No. 3 Rockford, motor drive.
No. 4 Becker.
No. 2 Oesterlein.
No. 1 Kemp Smith.

No. 2 Brown & Sharpe universal.
Nos. 2 & 3 Becker vertical.
8" Pratt & Whitney automatic.

SHAPERS

17" Smith & Mills, motor drive.
20" Gould & Eberhardt.

20" American.
16" Stockbridge.

LATHES

21"x11' Wickes, tapping attachment.
12"x8' Davis, motor drive.
16"x6' Hendey, serial 27650.

20"x8' LeBlond.
18"x8' Rockford.
18"x9' Chard, tapping attachment.

PRESSES AND SHEARS

58" Ferracute dbl. cr., m. d., 100 ton.
36"x36" Toledo double crank, arch.
No. 5 $\frac{1}{2}$ Walsh, flywheel.
No. 5 Michigan dbl. action cam.

No. 35 Atlas, motor drive, arbor.
8' 5/2" cap. Toledo, gap.
36" Stoll, 14" capacity.

MISCELLANEOUS

Bolt cutters, Acme.
Gear cutters, No. 3 Brown & S.
Gear cutters, Geometric; Landis.
Grinders, No. 11 Brown & S. cylind.

Grinders, No. 2 Norton.
Keysears, 1" Baker; No. 2 Davis.
Tapper, Gaterman.
Turret lathe, 24" Gisholt.

USED AND REBUILT MACHINERY

FOR SALE BY

W. L. Steege Electric & Machinery Co. 12 S. Clinton Str., Chicago

Bargains

Lathe, 16x6 LeBlond tool room, collets, 3 years old.....	\$375.
Lathe, 14x6 Hendey tool room, collets, reconditioned.....	325.
Miller, No. 1B Milwaukee, and vise, 4 years old.....	450.
Miller, No. 1 Kemp Smith universal, vise and dividing head.....	450.
Miller, No. 25A Osterlein universal, vise and dividing head.....	475.
Press, No. 105 Consolidated, double crank.....	300.
Press, punch, No. 5 Consolidated, geared, o. b. i., 3" stroke.....	450.
Shaper, 20" Cincinnati, arranged for motor drive, like new.....	300.

And many others. Write us your requirements.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S. - - - - - Pittsburgh, Pa.

Air compressor, 170 cu. ft. Worth'n.	Miller, No. 2½ Rockord, plain.
Automatic, 1½" Cleve. 4-spd., m. d.	Press, 64" Bliss double crk.. No. 5½.
Bulldozer, No. 9 Williams & White.	Press, No. 14 Bliss Toggle, 80,000 lb.
Drill, 4 spindle No. 4 Colburn Mfg.	Press, No. 59½ Toledo, 145,000 lb.
Drill, 4 spindle No. 2 Colburn, Mfg.	Shaper, 18" Whipp, b. g., vee ram.
Drill, 4' Western radial, motor dr.	Shapers, 24" & 32" G. & E. 230 v. d. c.
Drill, 6' Cincinnati-Bickford, radial.	Shear, squar. 60"x18 ga. Streine.
Hammer, 300 lb. Bradley up. helve.	Screw mach., No. 4 W. & S. univ.
Hammer, 100 lb. Beaudry upright.	Tapper, 1" Acme, 6-spd., nut.
Lathe, 48"x30' Betts-Bridge., m. d.	Shear, alligator, hi. knife, 1½" sq.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Air compressor, Chicago P. short belt drive, 12"x10", 369 cu. ft., 50 h. p., a. c. motor, starter, belt and tanks, Type NSB.....	\$ 550.
Automatic screw machines, B. & S., No. 00, 0 and 2.....	\$100. to 450.
Automatic screw machine, Gridley 4 spindle "F", 1½" and 2½".....	\$300 to 700.
Automatic screw machine, 3½" Cleveland Model A, No. 27182, as is.....	300.
Bolt cutter, 1" Landis, belt drive.....	125.
Drill, Mason h. s. b. b., pedestal type, 4 speeds, with motor 220-60-3.....	125.
Drill, 24" Sibley sliding head, b. g. and p. f.....	125.
Drill, 2-spindle H. W., h. s., b. b. heavy duty, class B.....	150.
Drill, 5 spindle Henry & Wright, h. s., b. b., 12" swing.....	150.
Gear cutter, B. & S. No. 3, 26" for spur gears.....	200.
Grinder, Norton No. 1, universal cutter and tool, 8"x15".....	150.
Grinder, Norton 6"x32" plain, Serial No. N3423.....	350.
Grinder, Gardner No. 4 disc, 23" dia. with press and tables, ball brg... ..	200.
Grinder, Ransom disc, 26" diameter with press and tables.....	150.
Grinder, chaser or dies, H. & G., also Modern.....	\$50. & 100.
Hammer, No. 3A High Speed with motor 220-60-3.....	200.
Lathe, 14"x6" American, q. c. with 4 jaw and 3 jaw chucks.....	250.
Lathe, 15"x8" Von Wyck, l. c. g., with chuck.....	125.
Lathe, 18"x8" Davis, d. b. g., q. c., heavy duty.....	450.
Lathe, 18"x8" 6" Chard, l. c. g., heavy duty.....	175.
Lathe, 18"x12" Hamilton, d. b. g., q. c., heavy duty, 2 chucks.....	475.
Lathe, gap, 22, 36"x8" 6" Barnes, sliding bed.....	575.
Lathe, 30"x13" H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs.....	800.
Miller, No. 2H B. & S. plain, cone type, with vise, c/s and arbors.....	400.
Miller, Cleveland universal, No. 1 g. h., fully equipped.....	450.
Miller, No. 2 MU. Garvin universal, fully equipped.....	350.
Miller, 12" Cincinnati, mfg. type, s. p. d., vise and pump.....	150.
Miller, Briggs, G & E. manufacturing, 16".....	75.
Miller, No. 5 Becker vertical, no rotary.....	300.
Miller, No. 7 Becker, Lincoln type.....	75.

USED AND REBUILT MACHINERY

FOR SALE BY

C. H. Waters Machinery Co. - 221 Harrison St., Elkhart, Ind.

MESTA OSCILLATING AND ROTATING PICKLING MACHINE
Steam or air operated. Capacity 11,000 pounds per hour. Diameter of cylinder 32". Equipped with four bronze alloy baskets, 54"x14"x7" long each. Can also furnish acid-proof Goodrich Vulcalock steel tank 6' 9"x9' 9"x5' 1" deep. Good condition. Low price.

FOR SALE BY

H. F. Wolnick Machinery Sales

Phone Lawndale 1777 - 21st & Marshall Blvd., Chicago

Automatics, Potter & J., 5A & 6A.
Bench lathes, with benches.
Engine lathes, 12" to 30".
Drill presses, 1 to 6 spindles.
Gear cutters and hobbers.

Grinders, various sizes.
Milling machines, Nos. 1 to 4.
Punch presses, sizes Nos. 1 to 7.
Screw machines, automatic.
Shapers, 16" to 32"

FOR SALE BY

McDonald Machinery Co.,

1535 N. Broadway, St. Louis, Mo.

Bolt mchs., Landis & Acme 14".
Boring mill, Lucas & Bul. hor. & vert.
Brake, D. & K. 6' 10 gauge, power.
Drills, Cin-Bickford 3' & 3 1/2' radials.
Drill, Moline 32-spindle hole hog.
Gear hobber, G. & E. 24" & 60".
Grinders, B. & S. No. 2 surf. & univ.
Grinder, Cincinnati 14"x77" plain.
Keyseaters, M. & M. No. 2.
Lathes, Hendey 20"x10', 13"x6' & 20"x12', grd. hd.; 50 others in stock.
Milling machines, B. & S. No. 5, vert.
Milling machines, Van Norman No. 2 duplex; B. & S. No. 1 1/2 Cinc.
No. 1 1/2, Hendey No. 1-B, Kemp.

No. 3; Ohio No. 29 B. & S. No. 2-A single pulley drive, all universal; Kemp. No. 1, LeBlond No. 3-H.; B. & S. No. 3-B, s. p. d., Cleveland No. 2, s. p. d., all plain, Cincinnati 12" Mig.
Pipe mchs., Curtis, B. & K. 12" m. d.
Punch press, d. c. grd., 79" between uprights, 5" stroke, wt. 38,000 lbs.
Screw machines, Foster No. 5, gr. hd.
Shapers, G. & E. S. & M., Cin., Ohio, American, Steptoe, Queen City, 12", 16", 18", 20", 24" and 28".
Square shears, Bertsch 10' 16 ga.
Turret lathes, W. & S. No. 2A univ.

FOR SALE BY

The Jones Machine Tool Co.,

Front & Pike Sts., Cincinnati, Ohio

Air compressor, 10x10 Bury.
Bolt cutter, 2" Landis (long bed).
Bolt cutter, 1 1/2" Landis, single spdl.
Bolt cutter, 1 1/2" Landis, dbl. spdl.
Boring mill, No. 32 G. & L., s. p. dr.
Brake drum truing lathe, m. d.
Gear cutter, No. 13 B. & S., bevel & sp.
Gear hobber, No. 1 Adams, Farwell.
Gear hobber, No. 12 Barber-Colman.
Grinder, No. 1 Diamond surf. 12x24".
Grinders, disc, various sizes.
Keyseater, No. 1 Baker.
Lathes, shapers & planers, all sizes.
Milling machines, all sizes.
Nibbler, No. 1 Gray 3/16" capacity.
Radial drills, various types.
Rail drill, 10' Andrews 16-sp., 3" cap.
Shear, 10' Poorman 14 gauge.

Shear, 60" L. & A. 3/16" cap. 18" gap.
Saeer, 60" Yoder, rotary, 16 ga.
Shear, 18" Southwark rotary, 10 ga.
Shear, 37" Toledo 16 ga. 15" gap.
Welder, 20 k. w. Gibb spot.
Welder, 35 k. w. Federal spot.
Upsetters, 2" Ajax, belt drive.

PRESSES

No. 1, Bliss, toggle.
No. 92 B Toledo 38" dbl. crank, grd.
No. 91 C Toledo 36" dbl. crank, plain.
No. 40 B Robinson 42" dbl. crk. grd.
No. 43 Robinson 46" dbl. crank, grd.
Open back inclinables. Various sizes.

PRESS-BRAKES

60" V. K. & V., 16 ga., motor drive.
120" Ohl, 10 ga., belt drive.
120" Bertsch, 3/16", motor drive.

We have a large stock—Send for new list

USED AND REBUILT MACHINERY

FOR SALE BY

The Elyria Belting & Machinery Co.,

Corner Williams and Buckeye Streets,

Elyria, Ohio

Grinder, Modern tool, 12x24, self-contained, countershaft.
Press, No. 164-A Consolidated, 3" stroke, weight 25 tons.
Press, No. 5-A Toledo, inclinable, 3" stroke.
Press, No. 55 Toledo, straight side, double back geared, 16" stroke.
Shaper, 16" Smith & Mills, plain.
Shaper, 16" Smith & Mills, back geared.
Shaper, 24" Cincinnati, crank, back geared.
Shaper, 34" Gould & Eberhardt, crank, back geared.
Shear, 48" Toledo, squaring, 11 gauge.

FOR SALE BY

Marr-Galbreath Machinery Co.,

58 Water St., Pittsburgh, Pa.

Air compressor, 10x10" Chgo., n.s.b.
Air comp., 15-21 cu ft., 175 lb., m. d.
Angle roll, No. 3 Niagara, 1 1/2x3/16".
Boiler, htg., No. 4-GS 28 Amer., Gas.
Bolt cutter, 4" Geometric, m. d.
Bolt cutter, 1 1/2" Acme, Landis heads.
Boring mill, horiz. 4" bar, Niles.
Boring mill, vert. 42" Bullard, s.h.d.
Boring mill, 30" Colburn.
Boring mill, 72" Cincinnati t. (95%).
Brake, 8" x14 ga. D. & K., belt.
Brake, 48" x18 ga., P.S. & W., hand.
Brake 10" Keene toggle, 16 gauge.
Brake, 10" x18 ga. D. & K. hand.
Brake, 10" x3/16" Dries & K., power.
Brake or press, 16" x10 ga., Ohl.
Broaching mch. Nos. 1 & 3 LaPointe
Bulldozer, No. 4 W. W., motor dr.
Bulldozer, No. 28-W. W., motor.
Crimping roll, 6 1/2" Robinson, 16 ga.
Drills, 20" b. g., p. f.
Drill, 26" Rockford, g. f. taper att.
Drill, 26" Prentice, b. g., s. h., m. d.
Drill, radial, 3' Drees, 3' Cinn.-B.
Engine, Diesel, 200 h. p. horizontal.
Forging mchs., 1 1/2", 3" & 3 1/2" (steel).
Furnace, No. 27 Stewart, Blower.
Grinder, 12"x86" Landis pl., for m. d.
Grinder, No. 12 Landis universal.
Grinder, No. 2 B. & S., surface, b. d.
Grinder, bench., 1 1/2 h. p., U. S. motor.
Grinder, disc, No. 4 Gard'r. d. e., b. b.
Grinder, universal t. & c. Nos. 2 & 3.
Hack saw, 13"x16" Peerless, b. d.
Hammer, No. 2-B Nazel, m. d.
Hammer, 40 lb. Bradley, H. H.
Hammer, 100 lb. Bradley, U. S.
Hammer, 800 lb. Erie stm. forg., s. f.
Hammer, 1000 lb. Chbg., steam drop.
Hoists, chain, 1 to 8-tons capacity.
Jointer, 6" Fay & Egan; 12" Powers.
Keyseater, 24" x24" Morton.
Lathe, 13" x6" Sebastian g. h., a. c. m.
Lathe, 14" x6" P & W. pan. d-in., t. a.
Lathe, 18" x6" National, q. c. g.
Lathe, 20" x8" Hendey, tie-bar, t. a.
Lathe, 20" x10" Hendey tie-bar, t. a.

Lathe, 18" x12" Hendey, t. b.; t. a.
Lathe, 19" x10" LeBlond, q. c. g., t. a.
Lathe, 22" x10" 10" Greaves-K., q. c. g.
Lathe, 24" x12" Pgh., q. c. g., chuck.
Lathe, 24" x16" S. & B., chuck, t. a.
Lathe, 48" x26" geared head, m. d.
Millers, plain, No. 3 LeBlond.
Miller, No. 28 Ohio; No. 3 Cin'ti.
Miller, 2-GS, Hendey, g. b., s. p. d.
Millers, horiz. No. 4 Ohio, 72x30x20"
Millers, vert., Becker, 3, 4B, 5B.
Miller, universal No. 4 B. & S.
Miller, auto. No. 2-M P. & J., s. p. d.
Motors, 1, 2 & 3 ph., also d. c.
Pipe machine, Williams, 3", s. p. d.
Pipe machine, 8" Jarecki.
Planer, 24" x24" x4' Pond, 1 head.
Planer, 48" x48" x10' Cin., m. d. rev.
Planer, 30" x10' W. & P., 2-heads.
Press, 42-h.p. Toledo, horn, plain.
Press, No. 6 Toledo, o. b. i., pl. m. d.
Presses, o. b. i., 18, 20 Bliss, m. d.
Press, 74 1/2" S. Bliss b. g., 10" str.
Press, 75 1/2" Bliss, b. g., t. r., 5" str.
Press, 78 1/2" Bliss, d. g., t. r., 10" str. (2).
Press, No. 80 1/2" Bliss, tie-rod, 32" str.
Presses, 250-ton B. & B. tire, vert.
Punch, s. e., Badger, 7" thrt., 3"x3".
Punch, s. e., No. 1 L & A 1 1/2"x1", 30" t.
Punch & shear, d. e., 9-A, Beloit.
Punch & shear, d. e. 16" thts; 1 1/2"x1"
with angle & bar shear blades, m. d.
Riveters, 2-A, 5 1/2 h. high speed.
Shaper, 20" Cin. G. B., a. c. motor.
Shapers, 16" and 24" G. & E., m. d.
Shaper, 24" P. & J. down feed & m. d.
Shaper, 25" S. & M., b. g., crk., b. d.
Shear, 36" x16 ga. Niagara, foot.
Shear, foot, 36" Niagara, 18" gap.
Shear, plate, 97"x9 1/2" Toledo, m. d.
Shear, thtless Lennox 1 1/2", 1 1/2".
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, 10" x16 ga. Ohl power.
Slotter, die, Garvin, cone drive.
Unishear, A-10 Stanley, m. d.
Welder, butt, 200 & 300 k. w.
Wheel press, 60-ton W. S., 34"x8 1/2".

USED AND REBUILT MACHINERY

FOR SALE BY

J. P. Rentschler & Co., - **6722 N. Maplewood Ave., Chicago**

Apr. brake, No. 182 D. & K. 8'x14 ga.
Apr. brake, No. 206 D. & K. 10'x14"
Apr. brake, No. 227 D. & K. 12'x14"
Mill'g mch. No. 3A B. & S. univ. m. d.
Presses, various sizes and types.

Press, No. 2-W Bliss wiring.
Press, embossing, 500 ton cap.
Rolls, bending, 4'x16 & 6'x14 ga.
Threading mch., 5/16" Geometric.
Welder, spot, Taylor 10 k. w.

FOR SALE BY

American Machinery Company 5511 Euclid Ave., Cleveland, Ohio

Air compressor, 8"x8" Chicago, b. d.
Bolt cutter, 3" Acme, belt drive.
Drill, 4' Drees radial, gear box.
Grinder, 18" Graham, face.
Grinder, 7 1/2 h.p. U.S. Elec. 24x2" whls.

Lathe, 28"x12' Greaves-Klus. q.c.g.
Plating gen. set, 6000 amp. 12 volts.
Presses, No. 12 W-F., hot trim (3).
Press, No. 58 Toledo hot trim., s. s.
Screw mch., No. 6 W. & S. hand (3).

FOR SALE BY

Percy M. Brotherhood & Son **114-118 Liberty Str., N. Y. City**

Boring mills, 10' Niles; 72" Sellers; 44"-54"-61" Bullard Maxi-Mills.
Lathes, 72"x40" Putnam; 72"x50" Pond.
Forging Machines. Press Brakes, Shears, Bending Rolls, Planers, Shapers,
Grinders, Milling Machines all sizes.
All Selected Tools.

FOR SALE BY

Davis Machinery Co., **St. Clair & Washington Sts., Toledo, Ohio**

Boring mill, 24" Bullard, side head.
Drill, 4-spindle Henry & W. h. s.
Drill, 3-spindle Leland-Gifford h. s.
Lathe, 20"x10" American q. c. g., d. b. g.
Miller, No. 2 Brown & Sharpe univ.
Miller, No. 2 Rockford universal.

Millers, Model C Becker, vert., (2).
Press, 18-C Bliss o. b. i.
Press, No. 3 Niagara o. b. i.
Shaper, 20" Ohio back geared.
Slotter, 6" Newton.
Tappers, No. 2 & 2X Garvin, (4)

FOR SALE BY

E. L. Klauber Machinery Co., **320-22 S. Third St., St. Louis, Mo.**

Gear cutter, No. 14 Whiton for spur, bevel and worm gears, automatic.
Lathes, 14x8, 16x8, 18x8, 22x12, 24x12 and 30x14.
Saws, No. 5 Robertson hi-speed; 6x6 Racine hi-speed.
Screw machines, No. 0 Brown & Sharpe automatic; No. 3 Wood tilted turret.
Shapers, 14" Steptoe; 16" Steptoe b. g.; 20" G. & E. b. g.
Surface grinder, No. 2 LaSalle automatic, with magnetic chuck.

FOR SALE BY

J. L. Lucas & Son, Inc., - **3 Fox St., Bridgeport, Conn.**

Late Type Toolroom Equipment.

Lathes, 14"x6" Monarch motor in base, Timken head, (2).
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Miller, No. 2 Van Norman duplex, late type.
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Surface grinder, No. 33 Abrasive, motor drive.

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Hammer, 3A High Speed, m. d.
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Press, No. 1½ Robinson o. b. i.

221 Harrison St., Elkhart, Ind.

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Shaper, 20" & 28" G. & E. b. g., c. d.
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Drill, radial, 5' Prentice.
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Drill, radial, 6' American.
Press brake, D. & K. 66", 12 ga. cap.

Press, 65C Niagara, double crank.
Shear, 6' Niagara, 14 ga., m. d.
Shears, 42" Stoll, 16 ga. cap.
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Engraver, E. S. Keller.
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Miller, 6"x80" P. & W. thread.
Miller, No. 2 B Milwaukee univ.

Miller, 48"x24"x10' Ingersoll.
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Shear, No. 1120 Niagara power, 18 ga.
Jones & Lamson, 2 spdl., like new.

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Automatic, 9/16" "G" Gridley 4-sp.
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Boring mill, 72" Gisholt vert., 2 hds.
Column facer, 14" Espen-Lucas.
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Punch, Thomas angle duplikator.
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Drill, 4 spindle Fox, No. 1 m. t.
Drill, 14" C-O, No. 2 m. t. m. d.
Drill, No. ½ Avey hsbh, 3/16" cap.
Drill, No. 2 Avey hsbh, No. 3 m. t.
Keyseater, No. 2 Davis, 9 cutters.
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Lathe, 14"x6' Star, pl. c. g.

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Millers, Nos. 1 & 2 Kemp, plain
Miller, No. 1½ A Rockford pl., v. hd.
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Shaper, 16" Smith & Mills crank.
Shaper, 30" Kelley crank, back grd.
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Welder, 5 k. w. Taylor spot.
Welder, 3 k. v. a. Thompson butt.

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Throat at tool to frame 37". Compound table 42" diameter.

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Drill, ISS Garvin duplex, 2 $\frac{1}{2}$ " cap.
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 Nos. 1 & 2 Davis Keyseaters.
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No. 33 Abrasive Vert. Surf. M. D.
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No. 3 Cincinnati High Power, s.p.d.
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48" Oesterlein tilted offset.	No. 7 Becker Lincoln.
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& # 39 Bliss; # 14 Nia.; # 42-A
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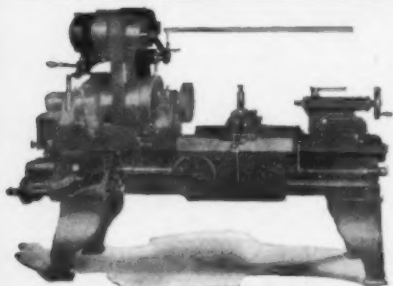
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